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EXAMINER	
MOORE, IAN N	
ART UNIT	PAPER NUMBER
2661	3

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/633,719	BURCHFIEL ET AL.
	Examiner	**Art Unit**
	Ian N Moore	2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. The following limitations are not shown in the drawings:

a) An expected port and an actual port (Claim 1, page 16)

b) Discarding the packet (Claim 3, page 16)

c) Generating an alert (Claim 4, page 17)

d) Internet Protocol packet (Claim 5, page 17)

e) Plurality of expected ports (Claim 9, page 19)

Therefore, the above-mentioned limitations must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

1. Claims 3, 6, 10, 14, and 17 are objected to because of the following informalities: Appropriate correction is required.

   a) **Claim 3** recites the limitation "**the** packet" (line 14). It is unclear whether "the packet" being discard is from the actual port or expected port. In particular, the same packet cannot present in two different ports.

b) **Claim 6** recites the limitations "**the** routing tree" and "**an** expected port" in line 4 and 5. There are insufficient antecedent basis for this limitation in the claim.

c) **Claim 10** recites the limitation "**a one** of the plurality of ports..." in line 7. There are duplicate words and either "a" or "one" should be removed.

d) **Claim 14** recites the limitations "**the** source network address..." in line 2. There is insufficient antecedent basis for this limitation in the claim.

e) **Claim 17** recites the term "therewith..." in line 2. Since the meaning is unclear, and the wording should be revised.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. **Claim 1** recites the limitation " **the** port" (in line 5). It is unclear whether "the port" (in line 5) refers to "**a** port" (in line 3). In particular, since one is expected port and the other is actual port, it is unclear whether the same port can be labeled as "actual" and "expected". The specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.
2. **Claim 6** recites the limitation "**concluding** with an expected port" (line 5). It is unclear what concluding means regarding an expected port. The specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama (U.S. 5,477,547) in view of Khansari (U.S. 6,446,131).

Regarding claim 1, Sugiyama '547 discloses a method for detecting network traffic comprising: receiving a packet, the packet including data for transmission over a network (see Fig. 1 and Fig. 2, Inter-LAN connection equipment 40 receiving packets from LAN 10, 20 and 30; col. 2, line 5-9; note that the packets are received from/to LAN 10 in order to/from transmit over LAN 20/30);

determining an expected port for the packet, the expected port being a port upon which the packet is expected to be received (see Fig. 1, Address Learning CKT 57; see col. 2, line 4-20 and col. 4, line 33-67; note that each received packet's source address (SA) and its corresponding LAN port address (i.e. the port where the packet is received) are stored in Address Table, by way of "learning" an SA and its corresponding port. Inter-LAN connection equipment configures the interface port toward LAN 10 as the "a expected port" for those packets from LAN 10. Therefore, when the packet is received via configured port LAN 10, the Inter-LAN connection equipment will have an intelligent to determine whether

the packet is valid. Therefore, it is clear that Inter-LAN connection equipment has a mechanism to identify the configured port, which is a port where packets are provisioned to receive);

determining an actual port for the packet, the actual port being the port upon which the packet is actually received (see Fig. 1, LAN port Address Comparing CKT 46 and Terminal Address Comparing CKT 47; see col. 2, line 22-34 and col. 5, line 29-53; note that any port (i.e. LAN 10 port, LAN20 port, or LAN 30 port) can received a packet, and the comparing circuits determine the validity of a packet. In particular, a received packet's source address, destination address and the "actual/receiving" LAN port number are compared against the information stored in Filtering Address Table memory (or) learned memory. When the packet is received at a port, Inter-LAN connection equipment determines the validity of a packet regarding receiving port number and expected port number. Therefore, it is clear that Inter-LAN connection equipment has a mechanism to identify the receiving port, which is a port where packets are arriving); and

providing packet handling when the actual port does not correspond to the expected port (see col. 9, line 15-34; note that after comparing between the stored LAN port number in the memory table and the received packet's LAN port number, the packet is forwarded if they do not coincide.)

Sugiyama '547 does not explicitly disclose a spurious network traffic and spurious packet handling (see Khansari '131 Fig. 7, step 214; col. 6, line 60-64; note that a duplicate packet arrived at the switch is the faulty/erroneous packet, and it is discarded by the switch since the received ports are not the same).

However, this limitation is taught by Khansari '131. Sugiyama '547 teaches a mechanism for processing a receiving packet at different ports. Khansari '131 teaches discarding erroneous packet when received port is not the same. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Sugiyama '547 as taught by Khansari '131 for the purpose of determining whether the frame was previously received on a port other than the inbound port; discarding the frame if the frame was previously received; see Khansari '131 col. 2, line 45-53. The motivation being that by providing a way to handle packet arriving at different port, it can increase optimal network connectivity.

Regarding claim 3, Khansari '131 discloses spurious packet handling includes discarding the packet (Sugiyama '547 Fig. 7, step 214; col. 6, line 60-64; note that when a duplicate packet arrived at the switch, it is the faulty/erroneous packet, and it is discarded by the switch.)

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Sugiyama '547 as taught by Khansari '131 for the same reason stated in Claim 1 above.

4. Claim 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama '547 and Khansari '131, as applied to claim 1 above, and further in view of Dobbins (U.S. 5,946,308).

Regarding claim 2, the combined system Sugiyama '547 and Khansari '131 discloses determining an expected port for the packet; and providing spurious packet handling when the actual port does not correspond to an expected port as described above in Claim 1.

Neither Sugiyama '547 nor Khansari '131 explicitly discloses a plurality of expected ports (see Dobbins '308 Fig. 1 network consists of SFPS switches and Fig. 3 a logical view of an SFPS switch; see col. 4, line 21 to col. 5, line 41; note that SEFS switches in Fig. 1 has plurality of input and output ports and each port is connected to either plurality of network sides (label N) or access sides (i.e. user side/customer side with label A). In particular SEFS switch S3 has four network ports connecting to other switches (i.e. S1 to S6). Therefore, an SEFS switch can be configured to receive a packet at any ports from other switches based upon network routing topology.)

However, this limitation is taught by Dobbins '308. The combined system of Sugiyama '547 and Khansari '131 teaches Inter-LAN connection equipment that has an intelligent of which port a packet should receive. Dobbins '308 teaches that utilizing an SEFS switch with plurality of configured ports and ability to receive packets from various network/switches over the network. Thus, the combined system of Sugiyama '547 and Khansari '131 can be used in Dobbins '308 network where there are pluralities of switches. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Sugiyama '547 and Khansari '131, as taught by Dobbins '308, for the purpose of designing a new secure fast packet switching (SFPS) technology which provides the same or better reliability and security as routers, but with much greater performance and without an increase in cost; see Dobbins '308 col. 1, line

44-55. The motivation being that by utilizing an SEFS switch in the network, it can increase the ability to guarantee a quality of service (QOS) by providing dedicated switched paths through the network via dedicated ports.

Regarding claim 7, the combined system Sugiyama '547 and Khansari '131 discloses determining an expected port for the packet as described above in Claim 1.

Neither Sugiyama '547 nor Khansari '131 explicitly discloses generating a table (see Dobbins '308 Fig.6 and Fig. 7, Table 1, VLAN mapping for Switch 11), the table associating each one of a plurality of source network addresses (see Dobbins '308 Table 1, VLAN IDs: VLAN 100 and 200) with a single port (see Dobbins '308 Table 1, access port 2);

determining a source network address for the packet (see Dobbins '308 col. 6, line 46-59; note that each switch strip off the encapsulated VLAN header in order to identify VLAN address); and

applying the table to determine single port associated with the source network address, the single port being the expected port. (See Dobbins '308 col. 7, line 13-40; note that each access port is configured/determined by mapping to at least one or more corresponding VLAN. Thus, when the packet arrives at the port, the table is used to identify which VLAN does the packet belong, and the table validates whether the access port is the configured port to a received packet.)

However, this limitation is taught by Dobbins '308. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify

the combined system of Sugiyama '547 and Khansari '131, as taught by Dobbins '308, for the same reason stated above in Claim 2.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama '547 and Khansari '131, as applied to claim 1 above, and further in view of Miklos (U.S. 6,621,796).

Regarding claim 4, the combined system Sugiyama '547 and Khansari '131 discloses spurious packet handling as described above in Claim 1.

Neither Sugiyama '547 nor Khansari '131 explicitly discloses generating an alert (see Miklos'796 Fig. 4 and col. 15, line 45-62; note that after the sender discards the packet, it generates a discard-signaling PDU message to notify the receiver which PDU has been discarded.)

However, this limitation is taught by Miklos'796. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Sugiyama '547 and Khansari '131, as taught by Miklos'796, for the purpose of providing a sender-initiated discard mechanism that is specifically designed to operate efficiently and effectively with Selective Repeat ARQ; see Miklos'796 col. 2, line 55-61. The motivation being that by notifying the receiver regarding the discarded PDU, it can increase efficiency and reliability in the network.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama '547 and Khansari '131, as applied to claim 1 above, and further in view of Kadambi (U.S. 6,104,696).

Regarding claim 5, the combined system Sugiyama '547 and Khansari '131 discloses the packet as described above in Claim 1.

Neither Sugiyama '547 nor Khansari '131 explicitly discloses an Internet Protocol packet (see Kadambi'696 col. 28, line 5-10; note that the router processes an IP packet or IPX packet arriving at the ingress module.)

However, this limitation is taught by Kadambi'696. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Sugiyama '547 and Khansari '131, as taught by Kadambi'696, for the purpose of designing the improved processing speed Layer three switches, sometimes referred to as routers, which can forward packets based upon the destination network address, can learn addresses maintain tables thereof which correspond to port mappings, utilize specialized high performance hardware, and off loading the host CPU so that instruction decisions do not delay packet forwarding; see Kadambi'696 col. 2, line 35-44. The motivation being that by utilizing layer-3 (i.e. IP) network switch, it can improve the speed of routing since routing is fully depended on the network addresses.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama '547 and Khansari '131, as applied to claim 1 above, and further in view of Spiegel (U.S. 5,649,108).

Regarding claim 6, the combined system of Sugiyama '547 and Khansari '131 discloses an expected port for the packet further comprises: determining a source network address for the packet concluding with an expected port and calculating an expected path for the packet (see Fig. 1, Address Learning CKT 57; see col. 2, line 4-340 and col. 4, line 33-

67; note that in order to determine the validity of a packet Inter-LAN connection equipment must learn the source address by way of extracting the packet's source address (SA) and storing into the memory along with the interface port number. Therefore, when the packet is received via configured port LAN 10 and valid SA, the Inter-LAN connection equipment will have an intelligent to determine whether the packet is valid. Also, the reason Inter-LAN connection equipment unit learns the source address (i.e. a combination of a LAN and source local addresses) and LAN port number is to identify/determine/calculate the incoming/receiving path/route of a packet.)

Neither Sugiyama '547 nor Khansari '131 explicitly discloses calculating a path for the packet according to the routing trees of one or more switches. (See Spiegel '108 col. 6, line 37-67; note that each switch determines/calculates a path based upon the routing table.)

However, this limitation is taught by Spiegel '108. Note that Sugiyama '547 teaches that determining a port based upon a packet source address, computing/identifying an expected path utilizing a packet's source address and storing in the memory. Spiegel '108 teaches a switch that determines/calculates a path based upon the routing table. Thus, Spiegel '108's switch can be used to determine a configured path for a packet according to the routing tables. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Sugiyama '547 and Khansari '131, as taught by Spiegel '108, for the purpose of providing the best alternate paths, or the paths with the least total cost if link-state protocols are used; see Spiegel '108 col. 2, line 24-25. The motivation being that by utilizing routing information stored routing table, it can increase the reliability in the network.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama (U.S. 5,477,547) in view of Khansari (U.S. 6,446,131).

Regarding claim 8, Sugiyama '547 discloses a system for detecting network traffic comprising:

receiving means for receiving a packet (see Fig. 1 and Fig. 2, Inter-LAN connection equipment 40 receiving packets from LAN 10, 20 and 30; col. 2, line 5-9; note that the packets are received from/to LAN 10 in order to/from transmit over LAN 20/30);

first determining means for determining an expected port for the packet (see Fig. 1, Address Learning CKT 57; see col. 2, line 4-20 and col. 4, line 33-67; note that each received packet's source address (SA) and its corresponding LAN port address (i.e. the port where the packet is received) are stored in Address Table, by way of "learning" an SA and its corresponding port. Inter-LAN connection equipment configures the interface port toward LAN 10 as the "a expected port" for those packets from LAN 10. Therefore, when the packet is received via configured port LAN 10, the Inter-LAN connection equipment will have an intelligent to determine whether the packet is valid. Therefore, it is clear that Inter-LAN connection equipment has a mechanism to identify the configured port, which is a port where packets are provisioned to receive);

second determining means for determining an actual port for the packet (see Fig. 1, LAN port Address Comparing CKT 46 and Terminal Address Comparing CKT 47; see col. 2, line 22-34 and col. 5, line 29-53; note that any port (i.e. LAN 10 port, LAN20 port, or LAN 30 port) can receive a packet, and the comparing circuits determine the validity of a

packet. In particular, a received packet's source address, destination address and the "actual" received LAN port number are compared against the information stored in Filtering Address Table memory (or) the learned memory. When the packet is received at a port, Inter-LAN connection equipment determines the validity of a packet regarding receiving port number and expected port number. Therefore, it is clear that Inter-LAN connection equipment has a mechanism to identify the receiving port, which is a port where packets are arriving); and

handling means for providing packet handling when the actual port does not correspond to the expected port (see col. 9, line 15-34; note that after comparing between the stored LAN port number in the memory table and the received packet's LAN port number, the packet is forwarded if they do not coincide.)

Sugiyama '547 does not explicitly disclose detecting spurious network traffic and a spurious packet handling (see Khansari '131 Fig. 7, step 214; col. 6, line 60-64; note that a duplicate packet arrived at the switch is the faulty/erroneous packet, and it is discarded by the switch since the received ports are not the same).

However, this limitation is taught by Khansari '131. Sugiyama '547 teaches a mechanism for processing a receiving packet at different ports. Khansari '131 teaches discarding erroneous packet when received port is not the same. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Sugiyama '547 as taught by Khansari '131 for the purpose of determining whether the frame was previously received on a port other than the inbound port; discarding the frame if the frame was previously received; see Khansari '131 col. 2, line 45-

53. The motivation being that by providing a way to handle packet arriving at different port, it can increase optimal network connectivity.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama '547 and Khansari '131, as applied to claim 8 above, and further in view of Dobbins (U.S. 5,946,308).

Regarding claim 9, the combined system Sugiyama '547 and Khansari '131 discloses determining means for determining a expected port for the packet; and handling means for providing spurious packet handling when the actual port does not correspond to an expected port as described above in Claim 8.

Neither Sugiyama '547 nor Khansari '131 explicitly discloses third determining, a plurality of expected ports, and second handling (see Dobbins '308 Fig. 1 network consists of SFPS switches and Fig. 3 a logical view of an SFPS switch; see col. 4, line 21 to col. 5, line 41; note that SEFS switches in Fig. 1 has plurality of input and output ports and each port is connected to either plurality of network sides (label N) or access sides (i.e. user side/customer side with label A). In particular SEFS switch S3 has four network ports connecting to other switches (i.e. S1 to S6). Therefore, each SEFS switch can receive a packet at any ports in from other switches based upon network and routing topology. Moreover, when a packet is received at a port, three processes occur: first configuration/determining received packet's port and address number by way of storing in the memory, second comparing/determining the received packet with the stored information, and process the packet based upon the result. Therefore, the same three processes can be

repeated for the packets receiving at plurality of incoming ports (i.e. third configuration/determining and second processing).)

However, this limitation is taught by Dobbins '308. The combined system of Sugiyama '547 and Khansari '131 teaches Inter-LAN connection equipment that has an intelligent of which port a packet should receive. Dobbins '308 teaches that utilizing an SEFS switch with plurality of configured ports and ability to receive packets from various network/switches over the network. Thus, the combined system of Sugiyama '547 and Khansari '131 can be used in Dobbins '308 network where there are pluralities of switches. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Sugiyama '547 and Khansari '131, as taught by Dobbins '308, for the purpose of designing a new secure fast packet switching (SFPS) technology which provides the same or better reliability and security as routers, but with much greater performance and without an increase in cost; see Dobbins '308 col. 1, line 44-55. The motivation being that by utilizing an SEFS switch in the network, it can increase the ability to guarantee a quality of service (QOS) by providing dedicated switched paths through the network via dedicated ports.

10. Claims 10, 12,13,14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khansari '131 in view of Sugiyama '547.

Regarding claim 10, Khansari '131 discloses a switch (see Fig. 2a, Bridge 16) for use in an internetwork (see Fig. 2a, internetwork between LAN 1 and LAN 3), the switch comprising: a plurality of ports (see Fig. 5, ports A1, B1, and C1), each port connected in a

communicating relationship with at least one of a connected switch (see Fig.2a, Bridge 14) and a network (see Fig. 2a, network 10);

a routing database (see Fig. 5, Memory 52), the routing database containing information relating to the internetwork (see col. 6, line 1-59; see Fig. 5, Memory 52 contains a program, filtering database, and hash table 58; note that memory contains a database to store/learn reading address information regarding the packets to be switched/routed between internetwork); a processor (see Fig. 5, Controller 50), and spurious packet (see Fig. 7, step 214; col. 6, line 60-64; note that a duplicate packet arrived at the switch is the faulty/erroneous packet, and it is discarded by the switch since the received ports are not the same).

Khansari '131 does not explicitly disclose the processor configured to compare a first port to a second port (see Fig. 1, LAN port Address Comparing CKT 46 and Terminal Address Comparing CKT 47; see col. 2, line 22-34 and col. 5, line 29-53; note that when the packet is received, the comparing circuits determine the validity of a packet by comparing between receiving port and learned port. In particular, a received packet's source address, destination address and the "first" received LAN port number are compared against the information (i.e. information including a second port number) stored in Filtering Address Table memory (of) learned memory. When the packet is received at a port, Inter-LAN connection equipment determines the validity of a packet regarding receiving port number and expected port number. Therefore, it is clear that Inter-LAN connection equipment has a mechanism to identify the receiving port, which is a port where packets are arriving),

the first port being a one of the plurality of ports through which a packet is received (see col. 2, line 22-34 and see col. 5, line 29-53; note that any port (i.e. LAN 10 port, LAN20 port, or LAN 30 port) can receive a packet, and receiving port is the "first" port), and

the second port being a one of the plurality of ports through which the packet is expected to received (see Fig. 1, Address Learning CKT 57; see col. 2, line 4-20 and col. 4, line 33-67; note that each received packet's source address (SA) and its corresponding LAN port address (i.e. the port where the packet is received) are stored in Address Table, by way of "learning" an SA and its corresponding port. Inter-LAN connection equipment configures the interface port toward LAN 10 as the "a second port" for those packets from LAN 10. Therefore, when the packet is received via configured port LAN 10, the Inter-LAN connection equipment will have an intelligent to determine whether the packet is valid. Therefore, it is clear that Inter-LAN connection equipment has a mechanism to identify the configured port, which is a port where packets are provisioned to receive),

the processor further configured to provide packet handling when the first port is different from the second port (see col. 9, line 15-34; note that after comparing between the stored LAN port number in the memory table and the received packet's LAN port number, the packet is forwarded if they do not coincide.)

However, this limitation is taught by Sugiyama '547. Sugiyama '547 teaches a mechanism for processing a receiving packet at different ports. Khansari '131 teaches discarding erroneous packet when received port is not the same. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Khansari '131 as taught by Sugiyama '547 for the purpose of providing

an inter-LAN connection equipment which can fastly start the forward of a packet to be passed and enhance a communication performance among terminals; see Sugiyama '547 col. 1, line 64-67. The motivation being that by providing an interconnect switch to handle erroneous packet arriving at different port before it forwards to the next switch, it can increase optimal network connectivity and performance.

Regarding claim 12, Khansari '131 discloses a plurality of link state update packets and a plurality of routing update packets (see col. 3, line 41-51 and see col. 5, line 54-62; per Fig. 4, the packet (i.e. MAC frame) consists of DA 102 and SA 104 fields, where each field can used to broadcast, unicast, or multicast to all bridges in the network regarding the routing/switching information. Broadcast Frame can be sent in response to new/updated switch/line/path information, or unicast frame can be sent in response to path/line failure by instructing a remote switch to update the routing.)

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Khansari '131 as taught by Sugiyama '547 for the same reason stated in Claim 10 above.

Regarding claim 13, Khansari '131 discloses one or more routing trees stored in the routing database in order to route the packet over the network as described above in Claim 10. Furthermore, Sugiyama '547 discloses the second port is calculated by examining the database (see Sugiyama '547 col. 2, line 4-20 and col. 4, line 33-67; note that each received packet's source address (SA) and its corresponding LAN port address (i.e. the port where the packet is received) are stored in Address Table, by way of "learning" an SA and its

corresponding port. Inter-LAN connection equipment configures the interface port toward LAN 10 as the “a second port” for those packets from LAN 10. Thus, the configured port is determined by storing. Also, see Khansari '131 col. 8, line 30-45. Therefore, it is clear that before the port information is stored in the database/memory, it must be examined to ensure if there is any previous information install. If there is any information, the database will be updated.)

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Khansari '131 as taught by Sugiyama '547 for the same reason stated in Claim 10 above.

Regarding claim 14, Khansari '131 discloses second port is calculated by examining the source network address of the packet as described above in Claim 10.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Khansari '131 as taught by Sugiyama '547 for the same reason stated in Claim 10 above.

Regarding claim 18, Sugiyama '547 discloses spurious network traffic handling includes discarding the packet (Sugiyama '547 Fig. 7, step 214; col. 6, line 60-64; note that a duplicate packet arrived at the switch is the faulty/erroneous packet, and it is discarded by the switch.)

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Khansari '131 as taught by Sugiyama '547 for the same reason stated in Claim 10 above.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khansari '131 and Sugiyama '547, as applied to claim 10 above, and further in view of Spiegel (U.S. 5,649,108).

Regarding claim 11, the combined system of Khansari '131 and Sugiyama '547 discloses a routing database and a plurality of connected switches as described above in Claim 10.

Neither Khansari '131 nor Sugiyama '547 explicitly discloses a routing tree for each switch. (See Spiegel '108 Fig.1, connected switches A-G; and Fig. 2, Routing Table 13 at each switch; col. 6, line 37-67; note that each switch consists a routing table.)

However, this limitation is taught by Spiegel '108. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Khansari '131 and Sugiyama '547, as taught by Spiegel '108, for the purpose of providing the best alternate paths, or the paths with the least total cost if link-state protocols are used; see Spiegel '108 col. 2, line 24-25. The motivation being that by utilizing routing information stored routing table, it can increase the reliability in the network.

12. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama '547 and Khansari '131, as applied to claim 10 above, and further in view of Dobbins (U.S. 5,946,308).

Regarding claim 15, the combined system Sugiyama '547 and Khansari '131 discloses processor as described above in Claim 10.

Neither Sugiyama '547 nor Khansari '131 explicitly discloses generating an expected port table (see Dobbins '308 Fig.6 and Fig. 7, Table 1, VLAN mapping for Switch 11),

the expected port table mapping each of a plurality of possible source network addresses (see Dobbins '308 Table 1, VLAN IDs: VLAN 100 and 200) to a unique port of the switch (see Dobbins '308 Table 1, access port 2),

whereby the second port is calculated by using a source network address of the packet (see Dobbins '308 col. 6, line 46-59; note that each switch strip off the encapsulated VLAN header to identify VLAN address) to look up the second port (see Dobbins '308 col. 7, line 13-40; note that each access port is configured/determined by mapping to at least one or more corresponding VLAN. Thus, when the packet arrives at the port, the table is used to identify which VLAN does the packet belong, and the table validates whether the access port is the configured port to received packet.).

However, this limitation is taught by Dobbins '308. The combined system of Sugiyama '547 and Khansari '131 teaches Inter-LAN connection equipment that has an intelligent of which port a packet should receive. Dobbins '308 teaches that utilizing an SEFS switch with plurality of configured ports and ability to receive packets from various network/switches over the network where there are plurality of switches. Thus, the combined

system of Sugiyama '547 and Khansari '131 can be used in Dobbins '308 network. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Khansari '131 and Sugiyama '547, as taught by Dobbins '308, for the purpose of designing a new secure fast packet switching (SFPS) technology which provides the same or better reliability and security as routers, but with much greater performance and without an increase in cost; see Dobbins '308 col. 1, line 44-55. The motivation being that by utilizing an SEFS switch in the network, it can increase the ability to guarantee a quality of service (QOS) by providing dedicated switched paths through the network via dedicated ports.

Regarding claim 16, the combined system Sugiyama '547 and Khansari '131 discloses a processor as described above in Claim 10.

Neither Sugiyama '547 nor Khansari '131 explicitly discloses generating an expected port table (see Dobbins '308 Fig.6 and Fig. 7, Table 1, VLAN mapping for Switch 11),

the expected port table mapping each of a plurality of possible source network addresses (see Dobbins '308 Table 2, VLAN IDs: VLAN 100 and 20) to a plurality of possible ports of the switch (see Dobbins '308 Table 2, access ports 1-2),

whereby a plurality of possible second ports are calculated by using a source network address of the packet (see Dobbins '308 col. 6, line 46-59; note that each switch strip off the encapsulated VLAN header to identify VLAN address; see also col. 7, line 13-40; note that each access port is configured/determined by mapping to at least one or more corresponding VLAN. Thus, when the packet arrives at the port, the table is used to identify which VLAN

does the packet belong, and the table validates whether the access port is the configured port to received a packet. Also see Dobbins '308 Fig. 1 network consists of SFPS switches and Fig. 3 a logical view of an SFPS switch; see col. 4, line 21 to col. 5, line 41; note that SEFS switches in Fig. 1 has plurality of input and output ports and each port is connected to either plurality of network sides (label N) or access sides (i.e. user side/customer side with label A). In particular an SEFS switch S3 has four network ports connecting to other switches (i.e. S1 to S6). Therefore, an SEFS switch can be configured to receive a packet at any ports in from other switches based upon network and routing topology (i.e. a plurality of possible ports of the switch). Since there are pluralities of ports, pluralities of processes occur utilizing a VLAN address of received packets at each port.)

However, this limitation is taught by Dobbins '308. The combined system of Sugiyama '547 and Khansari '131 teaches Inter-LAN connection equipment that has an intelligent of which port a packet should receive. Dobbins '308 teaches that utilizing an SEFS switch with plurality of configured ports and ability to receive packets from various network/switches over the network where there are plurality of switches. Thus, the combined system of Sugiyama '547 and Khansari '131 can be used in Dobbins '308 network. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Khansari '131 and Sugiyama '547, as taught by Dobbins '308, for the purpose of designing a new secure fast packet switching (SFPS) technology which provides the same or better reliability and security as routers, but with much greater performance and without an increase in cost; see Dobbins '308 col. 1, line 44-55. The motivation being that by utilizing an SEFS switch in the network, it can increase the

ability to guarantee a quality of service (QOS) by providing dedicated switched paths through the network via dedicated ports.

13. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khansari '131, Sugiyama '547 and Dobbins '308, as applied to claim 16 above, and further in view of Spiegel' 108.

Regarding claim 17, the combined system Khansari '131, Sugiyama '547, and Dobbins '308 discloses each one of the plurality of possible second ports that the packet is received from the one of the plurality of possible second ports as described above in Claim 10 and 16 above.

Neither Khansari '131, Sugiyama '547, nor Dobbins '308 explicitly discloses each ports has associated therewith a weight (see Spiegel' 108 Fig. 6A-6D, Total Cumulative Cost), the weight relating to a likelihood that the packet is received (see Spiegel' 108 col. 2, line 50 to col. 3, line 30; Also, see Fig. 7A-7D; note that each switch has a plurality of ports. Each link is coupled to a port (i.e. between two nodes). Thus, when assigning a cost to the link, it is assigning a cost related to the port. When a network is utilizing the least cost routing, a packet from the least cost link will arrive at each port.)

However, this limitation is taught by Spiegel '108. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Khansari '131, Sugiyama '547 and Dobbins '308, as taught by Spiegel '108, for the purpose of providing the best alternate paths, or the paths with the least total cost if link-state protocols are used; see Spiegel '108 col. 2, line 24-25. The motivation

being that by utilizing routing the least cost routing, it can reduce the bandwidth and resources required to route the packets in the network.

14. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khansari '131 and Sugiyama '547, as applied to claim 10 above, and further in view of Miklos (U.S. 6,621,796).

Regarding claim 19, the combined system Khansari '131 and Sugiyama '547 discloses handling the spurious network traffic handling as described above in Claim 10.

Neither Sugiyama '547 nor Khansari '131 explicitly discloses generating an alert (see Miklos'796 Fig. 4 and col. 15, line 45-62; note that after the sender discards the packet, it generates a discard-signaling PDU message to notify the receiver which PDU has been discarded.)

However, this limitation is taught by Miklos'796. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Khansari '131 and Sugiyama '547, as taught by Miklos'796, for the purpose of providing a sender-initiated discard mechanism that is specifically designed to operate efficiently and effectively with Selective Repeat ARQ; see Miklos'796 col. 2, line 55-61. The motivation being that by notifying the receiver regarding the discarded PDU, it can increase efficiency and reliability in the network.

15. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khansari '131 in view of Sugiyama '547.

Regarding claim 20, Khansari '131 discloses an internetwork (see Fig. 2a, internetwork between LAN 1 and LAN 3) comprising a plurality of switches (see Fig. 2a, Bridges 16, 14, and 12), each of the switches comprising:

a plurality of ports (see Fig. 5, ports A1, B1, and C1), each port connected in a communicating relationship with at least one of a connected switch (see Fig.2a, Bridge 14) and a network (see Fig. 2a, network 10);

a routing database (see Fig. 5, Memory 52), the routing database containing information relating to the internetwork (see col. 6, line 1-59; see Fig. 5, Memory 52 contains a program, filtering database, and hash table 58; note that memory contains a database to store/learn reading address information regarding the packets to be switched/routed between internetwork); a processor (see Fig. 5, Controller 50), and whereby spurious network traffic within the inernetwork is detected. (See Fig. 7, step 214; col. 6, line 60-64; note that a duplicate packet arrived at the switch is the faulty/erroneous network traffic/packet, and it is discarded by the switch since the received ports are not the same).

Khansari '131 does not explicitly disclose the processor configured to compare a first port to a second port (see Fig. 1, LAN port Address Comparing CKT 46 and Terminal Address Comparing CKT 47; see col. 2, line 22-34 and see col. 5, line 29-53; note that when the packet is received at any port, the comparing circuits determine the validity of a packet by comparing between receiving port and learned port. In particular, a received packet's source address, destination address and the "first" received LAN port number are compared against the information (i.e. information including a second port number) stored in Filtering Address Table memory (or) learned memory. When the packet is received at a port, Inter-

LAN connection equipment determines the validity of a packet regarding receiving port number and expected port number. Therefore, it is clear that Inter-LAN connection equipment has a mechanism to identify the receiving port, which is a port where packets are arriving), and

the first port being a one of the plurality of ports through which a packet is received (see col. 2, line 22-34 and see col. 5, line 29-53; note that any port (i.e. LAN 10 port, LAN20 port, or LAN 30 port) can receive a packet, and the receiving port is the "first" port), and

the second port being a one of the plurality of ports through which the packet is expected to received (see Fig. 1, Address Learning CKT 57; see col. 2, line 4-20 and col. 4, line 33-67; note that each received packet's source address (SA) and its corresponding LAN port address (i.e. the port where the packet is received) are stored in Address Table, by way of "learning" an SA and its corresponding port. Inter-LAN connection equipment configures the interface port toward LAN 10 as the "a second port" for those packets from LAN 10. Therefore, when the packet is received via configured port LAN 10, the Inter-LAN connection equipment will have an intelligent to determine whether the packet is valid. Therefore, it is clear that Inter-LAN connection equipment has a mechanism to identify the configured port, which is a port where packets are provisioned to receive),

the processor further configured to provide packet handling when the first port is different from the second port (see col. 9, line 15-34; note that after comparing between the stored LAN port number in the memory table and the received packet's LAN port number, the packet is forwarded if they do not coincide.)

However, this limitation is taught by Sugiyama '547. Sugiyama '547 teaches a mechanism for processing a receiving packet at different ports. Khansari '131 teaches discarding erroneous packet when received port is not the same. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Khansari '131 as taught by Sugiyama '547 for the purpose of providing an inter-LAN connection equipment which can fastly start the forward of a packet to be passed and enhance a communication performance among terminals; see Sugiyama '547 col. 1, line 64-67. The motivation being that by providing an interconnect switch to handle erroneous packet arriving at different port before it forwards to the next switch, it can increase optimal network connectivity and performance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N Moore whose telephone number is 703-605-1531. The examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Olms can be reached on 703-305-4703. The fax phone number for the organization where this application or proceeding is assigned is 703-305-9509.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Ian N Moore
Examiner
Art Unit 2661

INM
11/17/03

KENNETH VANDERPUYE
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